

REMARKS

Claims 1-23 are pending in this application. Claims 1 and 9 are amended and claims 21-23 are added herein. Applicant respectfully requests reconsideration of the claims in view of the following remarks.

Claims 1-3, 9, 10 and 17-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hirai, *et al.* (U.S. Patent No. 6,703,676 B2) in view of Yamada, *et al.* (U.S. Patent Publication No. 2003/0216018 A1).

However, independent claims 1 and 9 have been amended to more clearly include limitations relating to avoiding the formation of a conductive wall or fence along the sidewalls of the bottom electrode material. This problem is in no way even mentioned in the applied references and certainly the references do not teach avoidance of the problem in the manner taught and claimed in the present invention.

More specifically, the Examiner has selected and combined a mosaic of features from the Hirai, *et al.* and Yamada, *et al.* references and argued, for example, that it would have been obvious to combine the teachings of Hirai, *et al.* and Yamada, *et al.* to make the present invention and that Yamada, *et al.* would teach that by patterning the gate electrode using the sacrificial etch mask, the problem of over etching is avoided. However, over etching as such is not a problem underlying the present invention. As mentioned above, the problem addressed by the present invention and set forth in the claims is the formation of a conductive fence structure along the sidewalls of the electrode, which can cause electrical shorts that is to be avoided.

As was also mentioned, neither Hirai, *et al.* nor Yamada, *et al.* address the problem of formation of electrically conductive fence structures along the sidewalls of the electrode. Particularly, as is clear from paragraph [0036], Yamada, *et al.* merely uses the sacrificial hard mask 5b to avoid unnecessary etching of the gate oxide film 3 and the isolation oxide films 2 because of a small etch selectivity ratio. As stated, however, this is not the concern of the present invention. Further, as is also included in paragraph [0036], the first hard mask 5b does not have to be removed. This is, of course, contrary to the teachings of the present invention, since if the first hard mask is not removed, fence formation is likely to occur. Therefore, the teachings of Yamada, *et al.* are contrary to the teachings of the present invention.

It is believed the amendments to independent claims 1 and 9 clarify the claims such that all of the claims do now patentably define over all of the references of record and are allowable. Support for the amendments is throughout the specification including, for example, paragraph [0040].

Further, it is also clear that the Parkin, *et al.* (U.S. Patent No. 6,518,588 B1) and the Ying, *et al.* (U.S. Patent Publication No. 2004/0026369 A1) references do not overcome the shortcomings of the Hirai, *et al.* and the Yamada, *et al.* references with respect to the two independent claims.

In addition, new claims 21-23 have been added to assure full and complete coverage of the invention.

Applicant has made a diligent effort to place the claims in condition for allowance.

However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone James C. Kesterson, Applicant's attorney, at 972-732-1001 so that such issues may be resolved as expeditiously as possible.

Respectfully submitted,

\_\_\_\_\_  
June 21, 2004

Date

\_\_\_\_\_  
*James C. Kesterson*  
James C. Kesterson  
Attorney for Applicants  
Reg. No. 25,882

Slater & Matsil, L.L.P.  
17950 Preston Rd., Suite 1000  
Dallas, Texas 75252-5793  
Tel. 972-732-1001  
Fax: 972-732-9218